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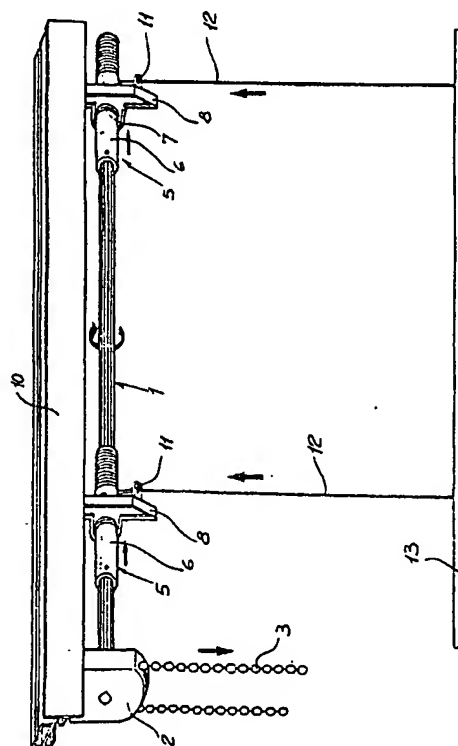
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54 A device for raising and lowering packet and pleated blinds, provided with means for orderly winding the driving cords.

57 The presente invention relates to a device for raising and lowering packet and pleated blinds, provided with means for orderly winding up the blind driving cords, comprising a driving bar (1) rotated by driving means (2), therewith there is associated, in a rotatively rigid and axially sliding way, at least an outside threaded sleeve (5) engaging with a nut screw (7) formed in a supporting fixed bracket, in order to axially displace the sleeve (5) as the bar (1) is rotated.

To the sleeve (5) the blind raising cord (12) ends can be affixed, the cords being wound on the sleeve (5) for raising and lowering the packet or pleated blind.



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## A DEVICE FOR RAISING AND LOWERING PACKET AND PLEATED BLINDS, PROVIDED WITH MEANS FOR ORDERLY WINDING THE DRIVING CORDS

### BACKGROUND OF THE INVENTION

The present invention relates to a device for raising and lowering packet blinds and pleated blinds, provided with means for orderly winding up the blind driving cords.

As is known, for raising and lowering packet blinds, cords are usually used, which cords are coupled to a bottom or lower bar, associated with the bottom end portion of the blind, said driving cords being wound on spools, bobbins or the like, which are rotated either manually or by means of electric motors and electronically controlled electric motors.

In known blind cord driving designs, each cord, as it is wound on its spool, assumes, very frequently, a not ordered arrangement; in other words, the cord turns are frequently arranged on the winding spool in a random way, with continuous bridgings.

This can lead to a kinking of the cord with a consequent malfunction of the blind raising and lowering device.

Another drawback of known approaches is that the useful diameter of the winding spool changes because of the mentioned kinkings of the driving cords, and, because of this reason, the raising and lowering movement of the blind is rather uneven, since, the spool rotation being the same, different cord lengths are supplied, depending on the assumed diameter as a lot of cord turns are superimposed.

### SUMMARY OF THE INVENTION

Accordingly, the task of the present invention is to overcome the above mentioned drawbacks, by providing a device for raising and lowering packet blinds and pleated blinds, provided with means for orderly winding the blind driving cords, adapted to evenly and orderly wind up the driving cords on the spool or winding body, so as to provide a constant or even diameter for each cord turn, thereby preventing the blind raising and lowering device for jamming.

Within the above mentioned task, it is a main object of the present invention to provide such a blind raising and lowering device which is very safe and reliable in operation and which can be easily constructed starting from easily available elements

and materials and which, moreover, is advantageous from a mere economic standpoint.

According to one aspect of the present invention, the above mentioned task and objects, as well as yet other objects, which will become more apparent hereinafter, are achieved by a device for raising and lowering packet blinds and pleated blinds in general, provided with means for orderly winding up the blind driving cords, characterized in that said device further comprises a driving bar, driven into rotation by driving means, therewith there is associated, in a rotatively rigid and axially sliding way, at least an outside threaded sleeve, engaging with a nut screw, formed on a supporting fixed bracket to axially displace said sleeve as said bar is rotated.

In particular, to said sleeve there is affixed one end of a blind raising and lowering cord, which is wound about said sleeve and is respectively wound thereon and un-wound therefrom for raising and lowering a packet blind.

### BRIEF DESCRIPTION OF THE DRAWINGS

Further characteristics and advantages of the present invention will become more apparent hereinafter from the following description of a preferred, though not exclusive, embodiment of a device for raising and lowering packet blinds and pleated blinds in general, provided with means for orderly winding the blind driving cords, which is illustrated, by way of an indicative but not limitative example, in the accompanying drawing in which:

1. Figure 1 is a schematic perspective view illustrating the device according to the invention.

### DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to the figure of the accompanying drawing, the device for raising and lowering packet blinds and pleated blinds in general, having means for orderly winding the blind driving cords, comprises a driving bar 1, preferably of the slotted type, which comprises slots longitudinally extending through the overall length of said bar.

Said bar 1, at one end thereof, is associated with driving means which, in the embodiment being disclosed, consists of a driving assembly 2, which can be actuated by a ball chain 3 in order to cause

said bar to rotate.

In this connection it should be apparent that the driving assembly 2 can also be replaced by other equivalent driving means, such as an electric motor, an electronically controlled electric motor and the like.

Furthermore, to said driving bar 1 there are coupled, with a spaced apart relationship, two sleeves 5, which, in their inside cavities, are provided with slots corresponding to said bar slots or, possibly, with a coupling pin for rendering said sleeves 5 rotatively rigid with said bar 1 but able of axially sliding with respect to said bar.

On their outer or outside surfaces, the sleeves 5 are provided with a thread 6 engaging with a corresponding nut screw 7 formed by supporting fixed bracket 8 coupled to the section member 10 to be applied to a wall or a ceiling.

More specifically, the brackets 8 are provided with a guide eyelet 11 therethrough said driving cords 12 are caused to slidably pass, said brackets supporting the bottom bar 13 which, as it is conventional, is coupled to the bottom end portion of the packet blind.

With the disclosed arrangement, as the bar 1 is rotated, in order to raise or lower the packet or pleated blind, the disclosed coupling causes said sleeves, rotatively rigid with said bar 1, because of their engaging with said nut screw 7, to be axially displaced, for a step, which depends on the pitch of the thread which has been set.

Thus, the driving cords 12, which are guided through the eyelets 11, will be wound on subsequent zones of the sleeve 5, so as to always provide a proper winding arrangement.

The cords 12 which, as aforesaid, are affixed at their top ends to said sleeves 5, will be wound on said sleeves 5 with an even winding pitch, since the sleeve 5 will be displaced correspondingly to the rotation of said bar 1 for raising or lowering the blind, and, in this manner, the turns of the cords 12 will be not superimposed.

This fact provides the advantage that the cord turns maintain an even diameter and, owing to this advantage, the bottom bar 13 will be always displaced in a parallel way to itself.

Moreover, the disclosed coupling affords the possibility of safely preventing cord jamming from occurring and, accordingly, the raising and lowering speed of the blind will be held always at a constant value.

From the above disclosure it should be apparent that the invention fully achieves the intended task and objects.

While the invention has been disclosed and illustrated with reference to a preferred embodiment thereof, it should be apparent that the disclosed embodiment is susceptible to many modifi-

cations and variations all of which will come within the scope and spirit of the appended claims.

## 5 Claims

1. A device for raising and lowering packet and pleated blinds, having means for properly winding the blind driving cords, characterized in that said device comprises a driving bar (1) rotated by driving means (2), therewith there is associated, in a rotatively rigid and axially sliding way, at least an outside threaded sleeve (5), engaging with a nut screw (7) formed in a fixed supporting bracket (8), in order to cause said sleeve (5) to be axially displaced as said bar (1) is rotated, to said sleeve one end of a blind raising cord (12) being affixed, said cord (12) being wound on said sleeve and respectively un-wound therefrom for respectively raising and lowering a packet blind.

2. A device, according to the preceding claim, characterized in that said driving bar (1) is a slotted bar.

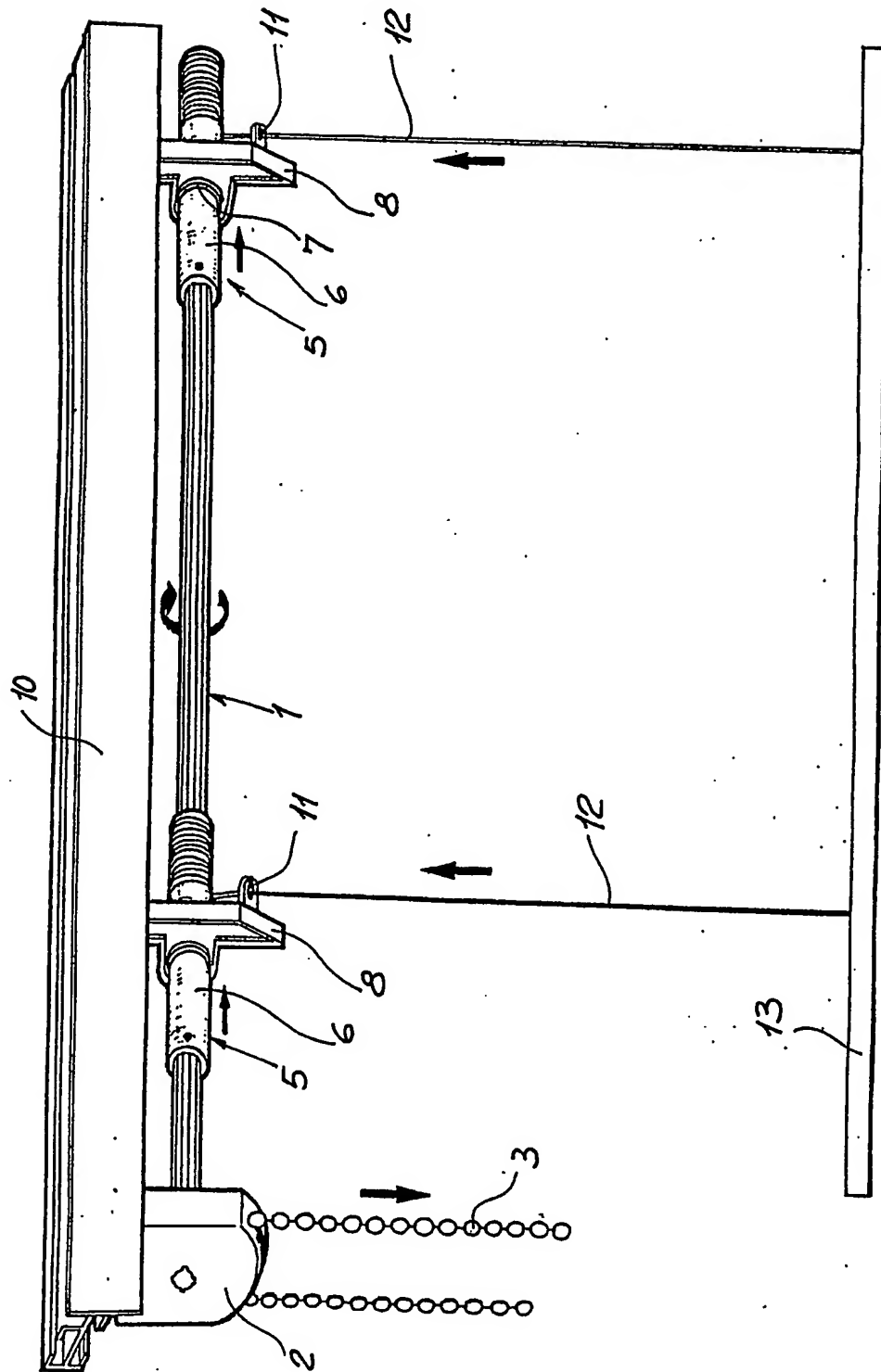
3. A device, according to the preceding claims, characterized in that it comprises a pair of spaced apart said sleeves arranged at the end portions of said driving bar.

4. A device, according to one or more of the preceding claims, characterized in that said sleeves (5) are provided, in their inside cavities, with a plurality of slots adapted to be mated with the slots of said driving bar (1).

5. A device according to one or more of the preceding claims, characterized in that it comprises at least a pin, rigid with the inner cavity of said sleeves, or with the outside of said sleeve, and adapted to be engaged with a slot of said bar in order to rigidly connect said sleeve and bar.

6. A device according to one or more of the preceding claims, characterized in that said device comprises a guide eyelet (11) for guiding therethrough said cord (12) rigid with said bracket (8).

7. A device for raising and lowering packet blinds and pleated blinds, having means for properly winding the blind driving cords, according to one or more of the preceding claims and as substantially disclosed and illustrated for the intended task and objects.





DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
X	GB-A-2 163 202 (A SHEN CHANG) * Page 1, lines 72-130; page 2, lines 1-40; figures 1-3 * ---	1-4,7	E 06 B 9/32
X	DE-A-1 509 779 (RÖCKER) * Page 5, paragraphs 2-4; figures 1-3 * ---	1,6,7	
X	GB-A- 931 344 (HUNTER DOUGLAS) * Page 1, lines 64-84; page 2, lines 1-20; figures 1-3 * -----	1,6,7	
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			E 06 B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 20-04-1989	Examiner VIJVERMAN W.C.
<b>CATEGORY OF CITED DOCUMENTS</b> X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document  T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document			

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